New Solar Homes Partnership

Affordable Housing

Overview

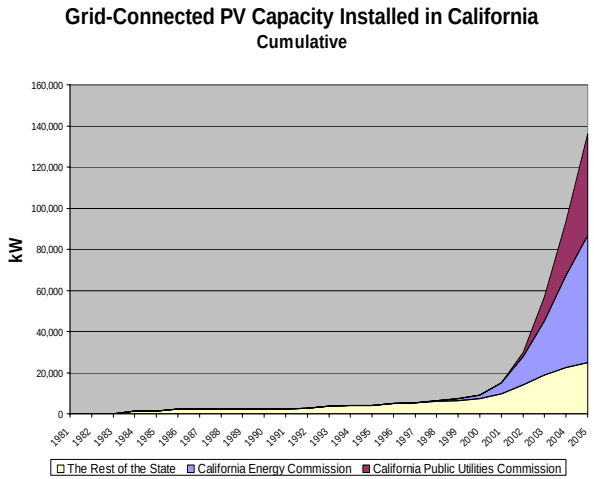
Tim Tutt

Advisor to Chairperson Jackalyne Pfannenstiel

Summary

- Baseline: Existing Programs
  - ~150 MW since 2000
  - Affordable Housing at CEC
- Next Generation: CSI and NSHP
  - 3000 MW by 2016
  - Affordable Housing at Both Agencies

Transition



Existing Solar Programs And Affordable Housing Treatment

- Special Treatment of Affordable Housing Established in 2002 by AB 58
- Residential Units Subject to Affordability Requirements
  - 50052.5, 50053, 50199.4
- 25% Higher Rebate, Capped at 75% Cost
- 10% More Efficient Than T-24, or Actions To Increase Efficiency by 10%

Affordable Housing Participation

- Almost 200 Projects, $2 million dollars
  - About 1% of Total Program
- Lower Cost Projects
  - Average $1.90, or about 20-25%, less
- Challenges
  - Sub-metering
  - Existing Properties
  - EE Requirements

Eligible Participants and Technologies

- Participants
  - New Homes In IOU Service Territories
  - Builder, Homeowner, or Installer Could Get Incentive
  - Work With Publicly Owned Utilities To Coordinate Statewide
- Technologies
  - Certified Systems and Components
  - Photovoltaics (Including Tracking PV, Concentrating PV)
  - Solar Thermal Electric Generators?
  - Solar Thermal Heating and Cooling
- Other Eligibility Requirements
  - High Level of Energy Efficiency
  - Metering and Rate Design

New Solar Homes Partnership

- CEC Program
  - New residential buildings only
    - Single-family homes
    - **Low-income**
    - **Multi-family apartments**
  - CEC will specifically target and work with the builder/developer community

High Levels of Energy Efficiency

- NSHP will require EE at least 15% beyond Title 24 Standards
  - Based in part on Building America and Zero Energy New Homes Programs
  - Advice to date has been:
    - "Energy Star is too easy"
    - "Move the industry towards zero energy homes“
- Probable Enhanced incentive for Higher Energy Efficiency Levels

Incentive Structure and Levels

- Basic Incentive Structure For NSHP:
  - Expected Performance Based Incentive (EPBI)
  - Probable Enhanced Incentive For Higher EE
- Will This Work for Affordable Housing?
- Ancillary Assistance: Training, Recognition, Technical, Marketing and Outreach

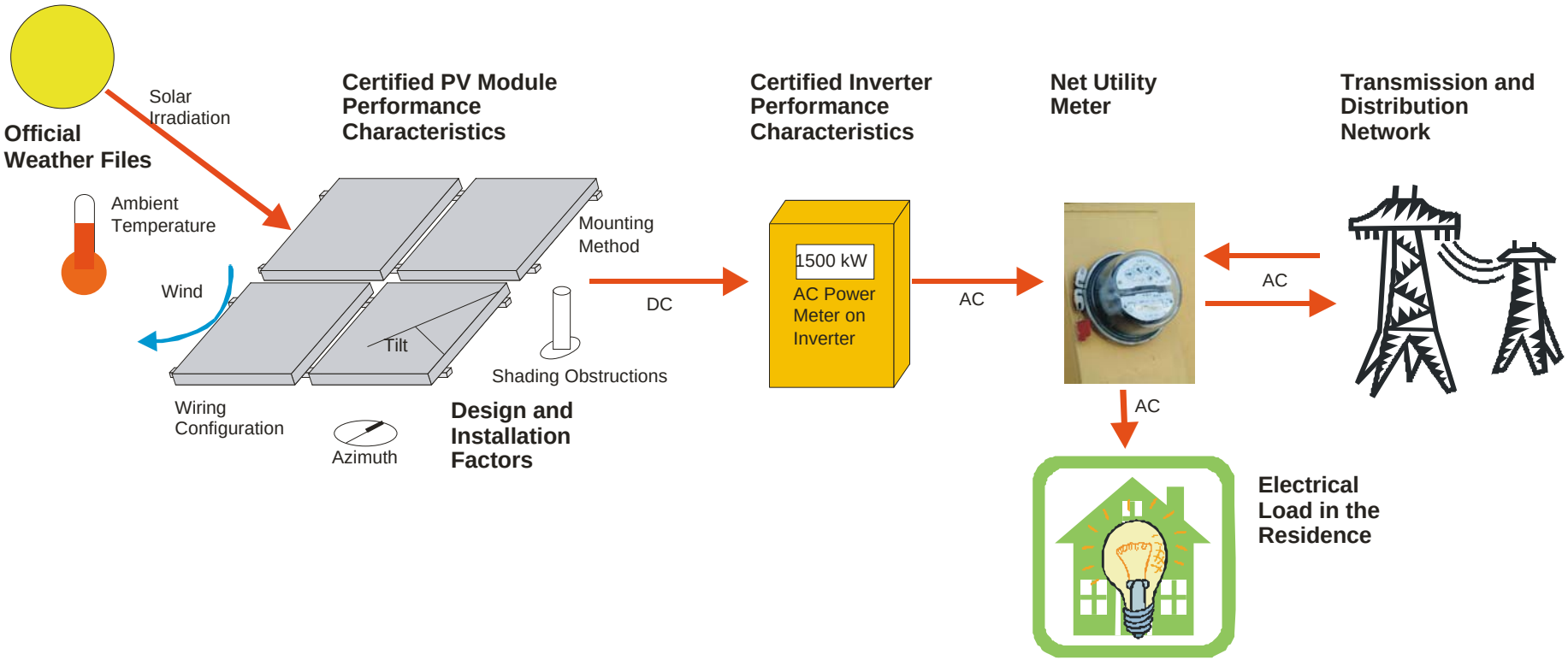
Incentive Levels Over Time

Year	Proposed NSHP Incentive $/Watt	*ERP* Affordable Housing Incentive $/Watt
2007	**2.25**	**2.8**
2008	**2**	**2.5**
2009	**1.75**	**2.2**
2010	**1.5**	**1.9**
2011	**1.25**	**1.6**
2012	**1**	**1.25**
2013	**0.8**	**1.0**
2014	**0.6**	**0.75**
2015	**0.4**	**0.5**
2016	**0.2**	**0.25**

PV Performance Issues

- Design/Installation Factors
  - Tilt, Orientation, Site characteristics such as shading, etc.,
  - Module/Inverter mismatch, wiring, etc.
  - Location (Average Annual Insolation)
  - Degradation
- Ongoing Normal Performance Factors
  - Dirt, Shading
  - Weather variability
- Infrequent But Significant Factors
  - Inverter failure
  - Fuses, etc.

PV Performance Calculations



Procedures, Specifications, Admin

- First Come First Served
- 24 month reservation period
- Field Verification Prior To Payment
- Advanced Metering Infrastructure (AMI) being rolled out from 2006-2013
- Administrative Function Contracted Out
- Will include periodic evaluations